



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,531	04/25/2001	Hyon T. Kim	5181-83600	7257
58467	7590	09/18/2008		
MHKKG/SUN				
P.O. BOX 398				
AUSTIN, TX 78767				
EXAMINER				
MEUCCI, MICHAEL D				
ART UNIT		PAPER NUMBER		
2142				
MAIL DATE		DELIVERY MODE		
09/18/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/842,531

Applicant(s)

KIM, HYON T.

Examiner

MICHAEL D. MEUCCI

Art Unit

2142

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 May 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/3508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Continuation of Disposition of Claims: Claims pending in the application are 1-4,6,7,9-12,14,15,17-19,21,22,24-34,36,37,39-42,44,45,47-49,51,52,54-64,66,67,69-72,74,75,77-79,81,82 and 84-90.

Continuation of Disposition of Claims: Claims rejected are 1-4,6,7,9-12,14,15,17-19,21,22,24-34,36,37,39-42,44,45,47-49,51,52,54-64,66,67,69-72,74,75,77-79,81,82 and 84-90.

DETAILED ACTION

1. This action is in response to the request for reconsideration filed 20 May 2008.
2. Claims 1-4, 6, 7, 9-12, 14, 15, 17-19, 21, 22, 24-34, 36, 37, 39-42, 44, 45, 47-49, 51, 52, 54-64, 66, 67, 69-72, 74, 75, 77-79, 81, 82, and 84-90 are currently pending.

Response to Amendment

3. Examiner acknowledges amendments made to overcome the rejections under 35 U.S.C. 112, second paragraph. These rejections have been withdrawn.
4. The applicant's differentiation between storage and transmission media as disclosed in the applicant's specification, paragraph [0090] on page 31, is acceptable. The rejections under 35 U.S.C. 101 have been withdrawn.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4, 6, 7, 9-12, 14, 15, 17-19, 21, 22, 24-29, 31-34, 36, 37, 39-42, 44, 45, 47-49, 51, 52, 54-59, 61-64, 66, 67, 69-72, 74, 75, 77-79, 81, 82, and 84-89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah et al. (U.S. 7,039,922 B1) hereinafter referred to as Shah, in view of Jibbe (U.S. 6,367,033 B1).

a. As to claim 1, Shah discloses a method for handling fabric state changes, comprising: a host system (Figs. 7, 8, 10, host 210 or 212 with administrator 720 with central fabric manager 710) receiving from a fabric (Figs. 7, 8, 10, fabric 202) coupled to the host system an event indicating a fabric state change (Figs. 7, 8, 10; fabric services 712 of the fabric manager 710 detecting I/O units for faults or link failures or device removal, col. 8, lines 48-50) for one or more host adapter ports (Fig. 2, I/O units 1 and 2) Of said host system (the central fabric manager 710 may be configured for learning physical cluster topology, detecting and managing faults or link failures in the data network 200 (see FIG. 2) and performing other network management functions, such as, for example, assignment of fabric-attached I/O controllers to cluster hosts 210 and 212, programming of forwarding tables at cluster switches such that the redundancy built into the topology is mapped as multiple paths between cluster hosts 210 and 212 and fabric- attached agents (e.g., I/O controllers), and reporting of multiple paths between the cluster hosts 210 and 212 and the fabric-attached agents (e.g., I/O controllers), col. 8, lines 24-63; col. 9, line 64 - col. 10, line 12; col. 12, lines 27-50); and the host system dynamically changing the host system's fabric device configuration in response to said receiving an event (At step 5 shown in FIG. 7, the I/O controller manager 7140 may send a message to the host-fabric adapter 325 of the host to which the new I/O controller has been assigned. This message to the host informs the host of the presence of the new I/O Controller, and provides (explicitly or implicitly) authorization for the host to access the new I/O controller. In the event that an I/O controller has been removed from the cluster fabric 202 or has been reassigned to another host in the

cluster fabric 202, a similar message may be sent to the host (the previous owner) indicating that the I/O controller is not available or is no longer assigned to the host. This allows the administrator and/or the I/O controller manager 714 to dynamically add, remove, or reassign I/O controllers in the cluster fabric 202 and quickly inform the affected hosts of this change in the assignment or ownership of the fabric-attached I/O controllers, col. 9, line 30- col. 10, line 62); wherein said host system dynamically changing comprises the host system bringing online (adding (inserting), initializing, assigning, and connecting (attaching)) or taking offline (removing or reassigning or detaching) one or more devices for the one or more host adapter ports for the host system (Figs. 7, 8, 10; col. 8, lines 24-63; col. 9, line 30- col. 10, line 62; col. 12, lines 27-50); wherein said bringing online comprises creating, within an operating system executing on the host system, an operating system node for each of the one or more fabric devices being brought online, wherein each operating system node provides a communication mechanism to a corresponding fabric device (Figs. 7, 8, 10; the fabric bus driver 620 on the host 210 creates a separate device object for each port of the host-fabric adapter 325 that can be used to communicate with the target fabric-attached I/O controller, col. 8, line 24 - col. 10, line 62; col. 11, line 40 - col. 12, line 50; col. 13, lines 23-57); wherein said taking offline comprises disabling, within an operating system executing on the host system, an operating system node for each of the one or more fabric devices being taken offline, wherein each operating system node provides a communication mechanism to a corresponding fabric device (Figs. 7, 8, 10; a message sent to the host (the previous owner) indicating that the I/O controller is not available or

is no longer assigned to the host, col. 8, lines 24-63; col. 9, line 30- col. 10, line 62; col. ~2, lines 27-50; col. 13, lines 23-57).

Shah does not explicitly teach: wherein each given operating system node provides a communication interface to a given corresponding fabric-attached mass storage device, and wherein an application running on said host system is configured to communicate with said given corresponding fabric-attached mass storage device through said given operating system node. However, Jibbe discloses: "Host-side monitor and analyzer 125 is coupled to a mass storage database 130. In a Fibre Channel arbitrated loop topology, host-side hub 110 may involve a node capable of routing traffic to host-side monitor and analyzer 125. In other embodiments, host-side monitor and analyzer 125 may be connected as a node into the arbitrated loop itself in which case function of the host-side hub 110 is built into host-side monitor and analyzer 125. In Fibre Channel systems involving a switching fabric oriented topology, host-side hub 110 may involve a switching fabric used to route traffic between nodes and send a copy of selected traffic to host-side monitor and analyzer 125," (lines 6-17 of column 5). It would have been obvious for one of ordinary skill in the art at the time of the applicant's invention to have each given operating system node provide a communication interface to a given corresponding fabric-attached mass storage device, and wherein an application running on said host system is configured to communicate with said given corresponding fabric-attached mass storage device through said given operating system node. "In some systems, the functionality of host-side monitor and analyzer 125 may be built into one of host computer 105's host adapters and the mass

storage database 130 may be implemented on a hard disk connected into the system 100," (lines 17-21 of column 5 in Jibbe). It is for this reason that one of ordinary skill in the art at the time of the applicant's invention would have been motivated to have each given operating system node provide a communication interface to a given corresponding fabric-attached mass storage device, and wherein an application running on said host system is configured to communicate with said given corresponding fabric-attached mass storage device through said given operating system node in the system as taught by Shah.

b. As to Claim 2, Shah discloses, determining an event type for said event (removal of the existing path due to an error or due to manual reconfiguration of the cluster fabric, col. 12, lines 43-45, col 13, line 54).

c. As to claim 3, Shah discloses, wherein if the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, said dynamically changing comprises taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric (Figs. 7, 8, 10; col. 8, lines 24-63; col. 9, line 30 - col. 10, line 62; col. 12, lines 27-50; col 13, lines 23-57).

d. As to claim 4, Shah discloses, wherein said taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric comprises: reading a persistent repository (looking up a database) that indicates which fabric devices are currently online for the host adapter port that lost connectivity to the fabric; and taking offline (removing) the fabric devices indicated by the persistent

repository for the host adapter port that lost connectivity to the fabric (Figs. 7, 8, 10; col. 8, lines 24-63; col. 9, line 30 - col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

e. As to claim 6, Shah discloses, wherein if the event type indicates that one of the fabric host adapter ports has lost connectivity to the fabric, said dynamically changing comprises: accessing a configuration file (looking up a database, col. 9, lines 54-63) for the host adapter port that lost connectivity to the fabric to determine if fabric devices for that host adapter port are to be unconfigured (unassigned) if that host adapter port loses connectivity to the fabric; and if the configuration file indicates that fabric devices are to be unconfigured upon lose of connectivity to the fabric, taking offline one or more fabric devices configured through the host adapter port that lost connectivity to the fabric (Figs. 7, 8, 10; a message sent to the host (the previous owner) indicating that the I/O controller is not available or is no longer assigned to the host, col. 8, lines 24-63; col. 9, line 30- col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

f. Claim 7 introduces identical limitations of claim 4; therefore, it is rejected under the same rationale as in claim 4.

g. As to claim 9, Shah discloses, prior to said receiving an event: a host adapter driver for one of the one or more host adapter ports becoming inactive or detached; and generating the event (the message) indicating that one of the one or more host adapter ports has lost connectivity to the fabric (Figs. 7, 8, 10; step 5 in Figure 7; col. 8, lines 24- 63; col. 9, line 30- col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

h. As to claim 10, Shah discloses, wherein said accessing a configuration file for the host adapter port that lost connectivity to the fabric comprises reading a user-defined attribute (a MAC or network address) in the configuration file, wherein the user-defined attribute indicates whether or not fabric devices for that host adapter port are to be unconfigured (unassigned) if that host adapter port loses connectivity to the fabric (Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

i. As to claim 11, Shah discloses, wherein if the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, said dynamically changing comprises bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric (Figs. 7, 8, 10; step 2 in Figure 7, the fabric service 712 detects the new I/O controller attached to the cluster fabric 202 and assign a MAC or network address to the new I/O unit and initialize the I/O by setting the ports of the I/O unit 1 to an active state, col. 9, lines 35-42).

j. As to claim 12, Shah discloses, wherein said bringing online one or more fabric devices for the host adapter port that has acquired connectivity to the fabric comprises: reading a persistent repository (looking up the database) that indicates which fabric devices were previously online for the host adapter port .that has acquired connectivity to the fabric; and bringing online the fabric devices indicated by the persistent repository for the host adapter port that has acquired connectivity to the fabric (Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 11, line 40 - col. 12, line 50; col. 13, lines 23-57).

k. As to claim 14, Shah discloses, wherein if the event type indicates that one of the fabric host adapter ports has acquired connectivity to the fabric, said dynamically changing comprises: accessing a configuration file (a database) for the host adapter port that has acquired connectivity to the fabric to determine if fabric devices for that host adapter port are to be .configured (assigned) if that host adapter port acquires connectivity to the fabric; and if the configuration file indicates that fabric devices are to be Configured (assigned) upon that host adapter port's connectivity to the fabric, bringing online one or more fabric devices for that host adapter port that has acquired connectivity to the fabric (Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 11, line 40 - col. 12, line 50; col 13, lines 23-57).

l. Claim 15 introduces identical limitations of claim 12; therefore, it is rejected under the same rationale as in claim 12.

m. As to claim 17, Shah discloses, prior to said receiving an event: a host adapter driver for one of the one or more host adapter ports becoming active or attached; and generating the event (the message) indicating that one of the one or more host adapter ports has acquired connectivity to the fabric (Figs. 7, 8, 10; step 5 in Figure 7; col. 8, line 24 -col. 10, line 62; col. 11, line 40 - col. 12, line 50; col 13, lines 23-57).

n. As to claim 18, Shah discloses, wherein said accessing a configuration file for the host adapter port that has acquired connectivity to the fabric comprises reading a user- defined attribute in the configuration file, wherein the user-define attribute indicates whether or not fabric devices for that host adapter port are to be configured if

that host adapter port acquires connectivity to the fabric (Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

o. As to claim 19, Shah discloses, wherein if the event type indicates that a new fabric device has been connected to the fabric, said dynamically changing comprises bringing online the new fabric device for one of the one or more host adapter ports (Figs. 7, 8, 10; col 8, line 24 - col. 10, line 62; col 12, lines 27-50; col. 13, lines 23-57).

p. As to claim 21, Shah discloses, wherein said bringing online the new fabric device comprises updating a persistent repository to indicate that the new fabric 'device is online for the host adapter port.(Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

q. As to claim 22, Shah discloses, wherein if the event type indicates that a new fabric device has been connected to the fabric, said dynamically changing comprises: accessing a configuration file for one of the one or more host adapter ports to determine if newly connected fabric devices for that host adapter port are to be dynamically configured; and if the configuration file indicates newly connected fabric devices are to be dynamically configured, bringing online the new fabric device for that host adapter port (Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 12, lines 27-50; col 13, lines 23- 57).

r. Claim 24 introduces identical limitations of claim 21 ; therefore, it is rejected under the same rationale as in claim 21.

s. As to claim 25, Shah discloses, prior to said receiving an event: connecting the fabric device to the fabric; and a fabric driver generating the event (the message) indicating that the new fabric device has been connected to the fabric (col. 9, line 30 - col. 10, line 62).

t. As to claim 26, Shah discloses, wherein said accessing a configuration file comprises reading (looking up) a user-defined attribute in the configuration file, wherein the user define attribute indicates whether or not newly connected fabric devices for that host adapter port are to be dynamically configured upon detection (Figs. 7, 8, 10; col. 8, line 24 - col. 10, line 62; col. 12, lines 27-50; col. 13, lines 23-57).

u. As to claim 27, Shah discloses, wherein the one or more host adapter ports comprise Fibre Channel host adapter ports (col 14, lines 55-60).

v. As to claim 28, Shah discloses, wherein the fabric comprises a Fibre Channel switched fabric comprising a plurality of Fibre Channel switches (col. 14, lines 55-60).

w. As to claim 29, Shah discloses, wherein the fabric is part of a storage area network (SAN), and wherein the fabric devices comprise storage devices (col. 14, lines 55-60).

x. Claims 31-34, 36, 37, 39-42, 44, 45, 47-49, 51, 52, 54-59 are system claims corresponding to the method of claims 1-4, 6, 7, 9-12, 14, 15, 17-19, 21, 22, 24-29; therefore, they are rejected under the same rationale as claims 1-4, 6, 7, 9-12, 14, 15, 17-19, 21, 22, 24-29.

y. Claims 61-64, 66, 67, 69-72, 74, 75, 77-79, 81, 82, and 84-89 are apparatus claims (computer readable storage medium) corresponding to the method of claims 1-4, 6, 7, 9-12, 14, 15, 17-19, 21, 22, 24-29; therefore, they are rejected under the same rationale as claims 1-4, 6, 7, 9-12, 14, 15, 17-19, 21, 22, 24-29.

7. Claims 30, 60, and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shah and Jibbe as applied to claims 1, 31, and 61 respectively, in view of Shah et al. (U.S. 6,889,380 B1) hereinafter referred to as Shah '380. As to claims 30, 60, and 90, Shah does not explicitly disclose, verifying the one or more, fabric devices before bringing the one or more fabric devices online, wherein said verifying comprises accessing a fabric name server to determine if the one or more fabric devices are currently connected to the fabric. However, in the same field of endeavor, Shah '380 discloses the fabric control driver simply verifies that the local channel adapter is ready for connectivity and then loads the driver (Shah '380, col 9, lines 41-62; col. 10, lines 40-59, col. 11, lines 32-51) for the purpose of successfully loading host-side drivers in the data networks (Shah '380, col. 1, lines 38- 40).

Response to Arguments

8. Applicant's arguments filed 20 May 2008 have been fully considered but they are not persuasive.

9. (A) Regarding claim 1, the applicant contends that Shah does not teach: bringing online or taking offline one or more fabric-attached mass storage devices. The examiner respectfully disagrees.

As to point (A), the applicant argues that the I/O controllers discussed in Shah are in no way identical to or suggestive of fabric-attached mass storage devices. The examiner points out that the I/O controllers shown in the figures and described in Shah are exemplary: "The present invention is applicable for use with all types of data networks and clusters designed to link together computers, servers, peripherals, **storage devices**, and communication devices for communications. Examples of such data networks may include a local area network (LAN), a campus area network (CAN), a global area network (GAN), a storage area network and a system area network (SAN), including newly developed data networks using Next Generation I/O (NGIO) and Future I/O (FIO) and Server Net and those networks which may become available as computer technology develops in the future. LAN systems may include Ethernet, FDDI (Fiber Distributed Data Interface), Token Ring LAN, Asynchronous Transfer Mode (ATM) LAN, Fiber Channel, and Wireless LAN. **However, for the sake of simplicity, discussions will concentrate mainly on exemplary use of a simple data network having several example hosts and I/O units including I/O controllers that are linked together by an interconnection fabric, although the scope of the present invention is not limited thereto**" (lines 10-28 of column 3 in Shah). Because storage devices can be substituted for I/O controllers in the entirety of Shah's disclosure, Shah

does teach fabric attached mass storage. As such, the rejection remains proper and is maintained by the examiner.

10. (B) Regarding claim 1, the applicant contends that the cited references fail to teach creating or deleting within an operating system executing on the host system an operating system node corresponding to a fabric-attached mass storage device. The examiner respectfully disagrees.

As to point (B), the applicant argues that Shah only teaches I/O controllers and not fabric attached mass storage devices. This argument has been discussed above in point (A).

11. (C) Regarding claim 1, the applicant contends that the cited references fail to teach the recited operating system node. The examiner respectfully disagrees.

As to point (C), the applicant argues the "node" of Jibbe is clearly part of a hardware device. The examiner points out that the applicant's specification defines the operating system node as an internal representation of an attached device and provides a communication path to the device (paragraph [0004] on page 2). By this definition, the "operating system node" is nothing more than a pointer or data structure that denotes the location/address of the attached device and an I/O controller capable of connecting to the device. Additionally, the applicant's statement that the host-side hub 110 is distinct from host systems 105 is incorrect. Quoted text of Jibbe states: " In other embodiments, host-side monitor and analyzer 125 may be connected as a node into the

arbitrated loop itself in which case function of the host-side hub 110 is built into host-side monitor and analyzer 125," (lines 10-13 of column 5); and "In some systems, the functionality of host-side monitor and analyzer 125 may be built into one of host computer 105's host adapters and the mass storage database 130 may be implemented on a hard disk connected into the system 100, (lines 17-21 of column 5)." This means that the host 105, host-side hub 110, and host-side monitor and analyzer 125 may all reside at the same location (i.e. at the host). The applicant's argument towards the irrelevance of the monitor/analyzer is moot because the monitor/analyzer was not cited for this limitation. The monitor/analyzer text was included in the arguments to show that the host 105 and hub 110 can reside at the same location. Since host-side hub 110 is responsible for the routing instructions of the host, the host-side hub (and thereby the host) handles the creation/deletion of entries (operating system nodes) of one or more fabric-attached mass storage devices that are brought online or taken offline. As such, the rejection remains proper and is maintained by the examiner.

12. (D) The applicant argues that the features of claim 1 are similar to those disclosed in claims 31 and 61. Therefore, examiner's responses to arguments regarding claim 1 at points (A) through (C) also pertain to claims 31 and 61.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Meucci at (571) 272-3892. The examiner can normally be reached on Monday-Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell, can be reached at (571) 272-3868. The fax phone number for this Group is 571-273-8300.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [michael.meucci@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

Art Unit: 2142

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Andrew Caldwell/
Supervisory Patent Examiner, Art Unit 2142